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ABSTRACT

This document represents nearly three years of work by the Kentucky Advisory Council for Environmental Education, a group appointed by the Kentucky Department of Education and consisting of representatives from education, government agencies, business, conservation groups, and others. The document includes: (1) a discussion of the nature of environmental education, (2) an analysis of the situation in Kentucky, (3) an identification of needs, resources, and strategies, (4) program goals and objectives, (5) strategies for implementation, and (6) evaluation and accountability plans. The state plan is viewed as a flexible guide to direct future activity. (RH)

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Guidelines for Environmental Education

THE KENTUCKY PLAN

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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FOREWORD

This document represents nearly three years of work by the Kentucky Advisory Council for Environmental Education, a group appointed by the Kentucky Department of Education and consisting of representatives from education, government agencies, business, conservation groups, as well as others concerned with the environment. Utilizing such a broad-based task force in the research and development of the Commonwealth's environmental education plan illustrates the idea that environmental education occurs not only in formal academic institutions, but in experiences outside that realm. In coordinating this effort, the Kentucky Department of Education recognizes that the key to success in any planning process is involvement. The Advisory Council for Environmental Education therefore presents this plan, not as an inflexible directive to be strictly adhered to, but rather it is meant to be a catalyst for the implementation of a statewide effort, an effort which will actively involve people in improving the quality of life.

Advisory Council for Environmental Education

Active Members

Robert H. Baker, Professor
Department of Elementary Education
Eastern Kentucky University
Richmond, Kentucky 40475

Juanita Blankenship, Teacher
John Adair Elementary School
Columbia, Kentucky 42728

Russell Bradt, Teacher
Belmont Junior High School
Winchester, Kentucky 40391

Bill Branan, Coordinator
Environmental Programs
Pine Mountain Environmental Center
Pine Mountain, Kentucky 40864

William S. Bryant, Instructor
Biology Department
Thomas More College
Fort Mitchell, Kentucky 41017

Ruth Fishback, Member
Buckley Hills Audubon Society
Versailles, Kentucky 40383

Sherry Florence, Teacher
Jeffersontown High School
Jeffersontown, Kentucky 40029

Bill Gayle, Director
Division of Conservation
Department of Natural Resources
& Environmental Protection
Frankfort, Kentucky 40601

James Gilpin, Director
Conservation Education
Department of Fish & Wildlife Resources
Frankfort, Kentucky 40601

Phil Hastings, Specialist
Environmental Education
Mammoth Cave National Park
Mammoth Cave, Kentucky 42250

Janet Hounshell, Teacher
L. B. J. Elementary School
Jackson, Kentucky 41339

Jerry F. Howell, Director (Vice-Chairman)
Environmental Studies
Morehead State University
Morehead, Kentucky 40351

Peggy Hyland, Director
King Center
Nazareth, Kentucky 40048

Lionel Johnson, Staff Officer
Daniel Boone National Forest
Winchester, Kentucky 40391

Hugh Jones, Member
Education Committee
National Association of Conservation Districts
Henderson, Kentucky 42420

Gerrit Kloek, Professor
Department of Biology
Kentucky State University
Frankfort, Kentucky 40601

Charles Livisay, Retired Teacher
Bryan Station Senior High School
Lexington, Kentucky 40508

James Major, Coordinator
Science & Environmental Education
Paducah Public Schools
Paducah, Kentucky 42001

Harold Massey, Director
Madisonville Community College
Madisonville, Kentucky 42431

Sie Mills, Supervisor
ROPES Region 13
Barbourville, Kentucky 40906

Barbara Owens, Teacher
Rockcastle County High School
Mt. Vernon, Kentucky 40456

Ray Muffett, Coordinator
Project of Environment and Early Childhood Education
Title III, ESEA Ky. Region V
Somerset, Kentucky 42501

John Paulk, Supervisor (Chairman)
Environmental Education Section
Tennessee Valley Authority
Land Between the Lakes
Golden Pond, Kentucky 42231

Scott Ranger, Director
Union College Environmental Center
Middlesboro, Kentucky 40965

Jack Rose, Professor
College of Human Development and Learning
Murray State University
Murray, Kentucky 42071

Mary Sprague, Member
Hardin Co. Environmental Council
Elizabethtown, Kentucky 42071

Roy Winchester, Superintendent
Henry County Schools
New Castle, Kentucky 40050

Sally Wooten, Teacher
Mayfield Elementary School
Richmond, Kentucky 40475

Past Members

Charles E. Baker
Environmental Science Division
Sterns-Rogers Corporation
Denver, Colorado 80217

Chuck Crume
Wildlife Artist
Shepherdsville, Kentucky 40165

Harold Grooms, Teacher
Bourbon County High School
Paris, Kentucky 40361

Frank Howard, Consultant
Science Education
Department of Education
Frankfort, Kentucky 40601

Adonna Riley, President
Kentucky Congress of Parents & Teachers
Frankfort, Kentucky 40601

Pete Westover
Conservation Officer
Amherst Conservation Commission
Amherst, Massachusetts 01002

Ex-Officio Members

Billy S. Blankenship, Director
Western Ky. Environmental Education Consortium
Murray State University
Murray, Kentucky 42071

Lynn Hodges, Specialist (Secretary)
Environmental Education
Tennessee Valley Authority
Land Between the Lakes
Golden Pond, Kentucky 42231

Terry Wilson, State Consultant
Environmental Education
Kentucky Department of Education
Frankfort, Kentucky 40601

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CHAPTER I

The Nature of Environmental Education

When dealing with any broad area of emphasis, it is desirable to have a definitive statement to serve as a focal orientation point. Unfortunately, a single definitive statement is not always available for meeting the diverse needs of several groups. Such is the case with environmental education. Rather than offering a single definition for environmental education, three definitive statements follow, each approaching the topic from a different perspective.

Definitive Statements

U.S. Office of Education - As established by the U.S. Office of Education, the "official" definition of environmental education is as follows:

> Environmental education is the education process dealing with man's relationship with his natural and manmade surroundings, and includes the relation of population, pollution, resource allocation and depletion, conservation, transportation, technology, economic impact and urban and rural planning to the total human environment.

Functional - When implementing programs, formal and informal, it is necessary to clarify essential points beyond the political. This need is met by a functional definition, outlining the parameters of environmental education. One such definition is provided by the Educational Facilities Laboratory.

Environmental education is:

- a new approach to teaching about man's relationship to his environment, how he affects and is affected by the world around him.
- an integrated process dealing with man's natural and manmade surroundings
- experienced based learning using the total human, natural and physical resources of the school

and surrounding community as an educational laboratory

- an interdisciplinary approach which relates all subject areas to a whole earth, a "oneness of purpose"
- oriented toward survival in an urban society
- life centered and oriented toward community development
- an approach for developing self-reliance in responsible, motivated members of society
- a rational approach to improve the quality of life
- geared toward developing behavior patterns that will endure throughout life.

The consensus is that environmental education is *not:*

- conservation, outdoor resource management, or nature study (although these areas may be included in an environmental education program)
- a cumbersome new program requiring vast outlays of capital and operating funds
- a self-contained course to be added to the already crowded curriculum
- merely getting out of the classroom.

Allegorical -For those not satisfied with either the U. S. O. E. or functional definition, the allegory of the blind men and the elephant is most appropriate. Each of the blind men examines the elephant and each describes it from his individual perspective, each differing greatly from the others. Their subsequent lack of agreement or compromise is tragically illustrative of similar shortsightedness among many environmental educators. Holding only to a single, narrow point-of-view, their philosophies become detrimental to other environmental education components, thereby fragmenting environmental education and weakening the program. Although emphasis should be given to special components in environmental education, it is necessary to maintain a holistic perspective keeping the numerous program components in complementary attitudes rather than in opposition.

General Philosophy

Environmental education is evolving. The various evolutionary stages have fostered numerous quantitative attempts to describe environmental education. These attempts have yielded equally numerous and complex definitions, few of which have been widely accepted. A reoccuring element, however, in most of these definitions is the categorization of environmental education as a *process.*

As a process, environmental education is a tool for obtaining a product, rather than a product in itself. Consequently, it is not taught as a course of study, but is used by educators as a process in the teaching of varied courses of study. Environmental education is, therefore, integrated into existing study areas rather than replacing them.

In its broadest sense, environment is everything outside of ourselves, and yet the effect of the environment on our innerselves, our values, our attitudes and aptitudes, and general well being is well documented. The environment is one of the most formative factors influencing life at all levels. It is also one of the least stable of these influencing factors. Drastic environmental change results in an equally radical adaptation or annihilation of the life within that environment. The environment, being readily accessible, becomes one of the richest sources for realistic situations, either manmade or natural.

The process of environmental education encourages problem-solving and decision-making by exposing students to problems and decisions as identified by their courses as exemplified in realistic environmental

situations. Problem-solving and decision-making skills are best achieved through techniques requiring investigation and inquiry, rather than those using pre-determined information and results. The implications of this process lead the instructor into techniques described as "open-ended," "inquiry-approach," and "hands-on" experiences. Although not limited to environmental education, these experiences and techniques are commonly used in developing and implementing environmental programs on the classroom level. The environmental education process encourages educators to apply these techniques to the real world rather than artificially developed situations. The course of study determines the applicable situations and the sources of examples are provided from the real world, the environment.

The environment becomes both the focal point of specific studies as well as the medium in which these studies are conducted. Environmental education promotes both the use of realistic situations taken from the environment as well as direct exposure to the situation in the realistic environment in which they exist and develop. This direct exposure provides the context for discussion including the wide diversity of correlated and interrelated factors which must be considered in reaching appropriate solutions and alternatives.

In seeking to educate tomorrow's citizenry, few skills are more desirable than those of problem-solving and decision-making. Few attitudes surpass those of survival, development, and change as they relate to an environmental ethic. As education is the means for achieving these goals, Kentucky ranks environmental education high in priority.

CHAPTER II

Situation Assessment

The Kentucky Department of Education lists the following two goals of education when referring to the overall educational goals in Kentucky:

I. Awareness of one's relationship to his physical environment and the wise use of resources

II. Understanding the effects of technology and of population growth on the environment.

There have been many sources of input in the development of these goals. Much is based on the historical development of environmental education in Kentucky, although inputs from inside and outside the Kentucky Department of Education have also played major roles.

Historical Development of Environmental Education in Kentucky

As early as 1941, Kentuckians felt the need for an organized education program based on natural and man-made environments. The Kentucky Department of Education and the Kentucky Department of Fish and Wildlife Resources published a 1941 curriculum guide for teachers *Units in Conservation of Wildlife and Other Natural Resources.* Soon to follow, in 1944, the Kentucky legislature passed the Kentucky Conservation Education bill. This statute empowered the Department of Education to implement and develop this program in Kentucky schools. Special emphasis was given to the conservation and preservation of soils, forests, water, minerals and wildlife.

By the early fifties an identifiable emphasis was being placed on outdoor education and nature study by many educational and recreational groups in Kentucky. During this time, numerous residential and non-residential conservation camps were established throughout the Commonwealth. It was through these camps that the philosophy of the conservation education program merged with the techniques of the outdoor education school.

With the coming of the sixties, the space age had special implications for environmental education. Science received the educational spotlight and major revisions were made in both content and process

areas of science education. Among the various science areas to emerge as innovative curricula was ecology. Ecology, and the special attention given to scientific exploration of the environment, was to be the preluding science to environmental education. This science was limited, however, to those scientifically inclined.

The layman was limited in his understanding of ecological principles until the late sixties. A national phenomena, Earth Day, successfully merged the academic, professional, and lay communities in 1970 into an active group with common interests. The educational result was a composite program of conservation education, outdoor education, and ecology. Although environmental education contained elements of each of these previous programs, it evolved into a unique program, separate from but inclusive of previous programs.

In Kentucky, the environmental educational program was formally instituted by the State Board of Education in a resolution assigning primary responsibility to the Bureau of Instruction. Since this resolution stated changing needs as a primary consideration, the program was initially formulated to meet specific needs. As these needs were met and new needs evolved, environmental education began to reach into non-traditional areas. The first consultant assigned specific duties in environmental education was the State Science Consultant. Under his direction two major steps were taken. The first major step was the development of an interim planning document, the *State Plan for Environmental Education Development* published in 1970. The SPEED documents outlined the roles and resources in Kentucky that were needed in order to implement a total environmental education program.

The second major step was the organization and implementation of a statewide writing conference to develop environmental education curricula. This conference was held during the summer of 1971 at Cumberland Gap National Historical Park and included members of the Kentucky Department of Education, public and private school personnel, and a variety of representatives from other Kentucky institutions. The results of this conference were eventually published as the first two curriculum units, *Hands-On Kentucky: Science 4-6* and *Hands-on Kentucky: Sights and Sounds 4-6*. These model units were piloted during the spring in 1972 in the following schools:

Watson Lane Elementary
Jefferson County

Booker T. Washington
Fayette County

Owen County Elementary
Owen County

LBJ School
Breathitt County

Lynvale Elementary
Hardin County

Howe Valley Elementary
Hardin County

Middlesboro East Elementary
Bell County

Barbourville Elementary
Knox County

In the fall of 1971, a full-time consultant was placed on the staff of the Bureau of Instruction with responsibility for environmental education program development and implementation. Through existing and developing programs in conservation education, outdoor education and ecology, new programs began to surface that were a mixture of past programs, but with newer elements and goals. These were the first environmental education programs. With leadership provided by the Kentucky Department of Education, ties were strengthened with existing state agencies, local agencies, as well as the federal agencies involved in programming for environmental education. In 1972, the Kentucky Conservation Education Statute of 1944 was revised and terminology updated with direct reference to environmental education rather than conservation education.

A very active year, 1972, was highlighted by a statewide conference, "Planning for Environmental Education." The conference purpose was to identify needs, resources, goals and objectives for environmental education in Kentucky. Over 100 individuals, representing more than 60 local, state and federal agencies,

community groups, public and private schools, colleges and universities, and governmental leaders, spent three days in developing guidelines and recommendations based on their identifications of priority items. Some direct results of the Lake Barkely "Planning for Environmental Education" conference emerged as a statewide series of student leadership training courses provided by Students Toward Environmental Participation (STEP), as a periodical newsletter published by the Kentucky Department of Education, and as a formalized Advisory Council for Environmental Education to the Kentucky Department of Education. This advisory council assumed the major responsibility for providing the Kentucky Department of Education with proposals and recommendations relating to environmental education in the spring of 1974 and in 1975.

Input from Within the Kentucky Department of Education

Bureau of Instruction: The Bureau of Instruction has the major responsibility for program development within the Kentucky Department of Education. It is within this bureau that the concept of a total environment education program for Kentucky was conceptualized. In addition to its staffing of the State Consultant for Environmental Education, this bureau has published curriculum models, maintains a vast collection of curriculum material including the ERIC system, has sponsored special subject area (i.e., math, science, language arts, social studies, art, media center) conferences which include components of the environmental education program, and has the primary responsibility for development and promotion of environmental education in Kentucky.

Within the Bureau of Instruction are housed the special federal programs relating to education, several of which have had input into environmental education. One of these programs is ESEA Title III. It was through Title III that many of the early attempts at integrating the environmental education program into the formal educational structure were funded. Significant "pioneer" programs included the Paducah, Kentucky school system and its publication of *Objectives and Field Activities for Environmental Education* in the mid 60's and the model outdoor laboratory in Bourbon County, Kentucky during the same time period. Later, in the early 70's, the Region IV-B project at Bourbon County was expanded into a regional effort inclusive of both school site developments coordinated with curriculum development. During the 70's, ESEA Title III, Region VI, housed at Eastern Kentucky University also implemented a series of teacher awareness workshops and provided over 300 teachers with practical field experiences and college credit. In Somerset, Kentucky, Title III developed Project PEECE, Project for Environmental and Early Childhood Education, which involved teachers in exemplary curriculum development and resulted in the publication of a K-12 curriculum guide. These innovative programs funded through ESEA Title III provided a firm base of reference for the many additional programs that were to develop in Kentucky.

The Bureau of Vocational Education in Kentucky has contributed to the overall environmental education program through its training of environmental and resource field personnel. Other services have been in relation to environmental career opportunities and special sessions involving training in areas of conservation of natural resources.

Teacher certification has received much controversial publicity nationally with respect to environmental education. Kentucky has no certification requirement for educators using environmental education or for individuals administering environmental education programs. The Division of Teacher Education and Certification has several programs that relate to environmental education from the perspective of community development. Drug awareness is typical of these supportive programs.

The Kentucky Department of Education draws on the resources of many local, state and federal agencies for the development and promotion of environmental education. These multi-agency, cooperative programs have been sponsored under the auspices of a variety of groups, including the National Park Service

and UNESCO, both sponsors of the Students Toward Environmental Participation (STEP) program, and the U.S. Forest Service, co-sponsor of the Youth Conservation Corps (YCC). In addition to co-sponsoring such program efforts, the Kentucky Department of Education serves in an advisory and consultatory capacity to numerous groups.

Input from Outside the Kentucky Department of Education

As an early leader in the field of conservation education, the Kentucky Department of Fish and Wildlife Resources co-sponsored a curriculum guide with the Kentucky Department of Education in August, 1941. Over the years, this state agency has been consistent in providing educational services throughout the state. They have made available to Kentucky schools a wide range of services, including the use of conservation officers for periodic presentations, an excellent film library on conservation themes, and three summer camps. Structured to serve the upper elementary student, these camps are geographically spaced across the state. In summer residence programs, students are exposed to an intensive program of recreation and education as they relate to conservation education and related skill development.

Another highly supportive branch of state government is the Kentucky Department of Natural Resources and Environmental Protection. Much of the support is elicited through the National and Kentucky Association of Conservation Districts. An annual activity of this state agency is the sponsorship of the Conservation Essay and Poster Contest, which originated shortly after the passage of the Kentucky Conservation Statute of 1944. It is co-sponsored by several state agencies and the *Louisville Courier-Journal and Times* newspapers. With an annual theme change, this contest requires that the student write an environmental essay or create a poster. The 1944 participation of less than 200 students has increased to an annual participation of more than 90,000 students. Although a single activity, this contest is well received throughout Kentucky.

Serving in an advisory capacity to the Kentucky Department of Natural Resources and Environmental Protection is the Environmental Quality Commission. In the few years since its inception, this group has been instrumental in providing mini-grants for public education programs, and has served as a vehicle for public involvement in environmental decision-making.

Kentucky is especially fortunate in having several environmental education centers functioning as residential resource centers throughout the state. Although the use of these centers by no means constitutes a total environmental education program, schools using these facilities find the activities and programs useful in rounding out their total education program. In their chronological order of development, these centers are **Land Between the Lakes Environmental Education Center, Union College Environmental Education Center, Pine Mountain Environmental Education Center,** and **King Environmental Education Center.**

Land Between the Lakes is located in western Kentucky and Tennessee. The environmental education center, 5200 acres, is located in the center of the 170,000 acre peninsula. Two residential facilities, one in Kentucky and one in Tennessee, provide meals and housing for student groups using the areas on a residential basis. Staff at **Land Between the Lakes** provide intensive teacher training prior to use of the area. General orientation to the area as well as program possibilities is discussed in depth. While at the facilities, the regular school personnel are in charge of the program and teach the students. TVA personnel are in charge of the program and teach the students. TVA personnel are not involved in the teaching of students, except in rare instances when they serve as general resources aides and experts in specific fields. Land Between the Lakes is a national demonstration area for environmental education programs as well as for outdoor recreation and is a major project of the **Tennessee Valley Authority.**

Union College Environmental Center is located in **Cumberland Gap National Historical Park** at Middlesboro,

Kentucky. A joint project of **Union College** and the **National Park Service,** the environmental education center was developed from an abandoned Job Corps Center. The center is well located for study of both the cultural and physical influx of civilization into Kentucky. Staff at the center provide special assistance prior to the residential experience and while in residence. The immediate proximity of the Park and the excellent interpretive program are assets to the programs available at the center.

Just west of the Union College center, and north of Pineville, Kentucky, is **Pine Mountain Environmental Education Center**. The center is representative of the physical and cultural lifestyles of the mountain environments. Drawing heavily from local resource personnel as resource aides and general employees, this center allows students to experience firsthand the unique cultural traits of the area. Archaeological digs are readily available and strip mining operations are but a short drive away. The seclusion and beauty of this 600-acre facility provide an ideal setting for environmental study and reflection.

As the needs for diverse environmental settings and centers increased in Kentucky, **King Environmental Education Center** was developed on the site of a former private college, Nazareth, near Bardstown, just 30 miles south of Kentucky's largest metropolitan area. This center effectively mixes the outdoors with its well-stocked laboratories and library. Of special interest to the many urban schools using the facilities is a 140-head working dairy herd. The King Center can house and feed large numbers of students and teachers (up to 300).

In addition to the residential resource centers in Kentucky, there are numerous museums and nature centers that have made significant contributions to Kentucky's Environmental Education Program. One is the Buckley Hills Audubon Society which has provided assistance to educational programs for several years. They have provided a community nature center for use by all groups as well as sponsoring annual teacher training workshops, and providing reference materials for schools in the central Kentucky area.

Another regional resource for the public and schools is Bernheim Nature Center. This area, between Shepherdsville and Bardstown, has been a long standing favorite of visitors interested in the unique botanical and artistic plantings. The nature museum offers visitors an introduction to the area and the extensive trail system allows firsthand exploration.

The Kentucky Department of Parks is making significant progress in the development of resource centers in the state parks. Initially, efforts have been at Carter Caves State Park and Pine Mountain State Park, but plans have been established for the other state parks. In addition to area development, the Kentucky Department of Parks sponsors a traveling nature museum and employs several interpretive naturalists within their system.

More recent developments in the area of non-residential resource centers include the Living Arts and Science Center, Lexington, Kentucky, the Otter Creek Project, Louisville, Kentucky, and a wide range of recreational-educational centers sponsored in conjunction with the American Camping Association.

In addition to localized regional and state programs and facilities, Kentucky is fortunate in having several federal agencies actively involved in the promotion and development of environmental education. The National Park Service operates three major parks in Kentucky. Cumberland Gap National Historical Park is home for the Union College Environmental Education Center. Mammoth Cave National Park, the largest of the NPS holdings in Kentucky, has developed a comprehensive environmental educational program based on the NEED (National Environmental Education Development) and NESA (National Environmental Study Areas) programs which serve primarily day-use groups from surrounding schools. Abraham Lincoln Birthplace National Historical Site is the third site operated by the National Park Service.

The U.S. Forest Service is another federal agency actively involved in environmental education programming in Kentucky. The primary resources of the U.S. Forest Service are the Daniel Boone National Forest and

Berea Research Center, both of which are located in eastern Kentucky. Forest Service personnel assist school systems in the development of materials and serve as resource aides to programs in the area. Many nature and hiking trails are maintained at their recreational areas throughout the Daniel Boone National Forest.

A program of the USFS and NPS is the Youth Conservation Corps. This program is active in areas supervised by the Forest Service and National Parks with major emphasis in the Daniel Boone National Forest and Mammoth Cave National Park. Federally-assisted state grant YCC programs included those in Bowling Green and Elizabethtown during the summer of 1974. During this summer, Kentucky had the largest (100) and the smallest (6) YCC programs in the nation.

Another major federal agency in Kentucky is the Tennessee Valley Authority. Active throughout Kentucky, the TVA serves as consultant to a wide variety of environmental educational programs. The primary focus of TVA's activity is centered in western Kentucky at Land Between the Lakes.

Another branch of the U.S. Department of Agriculture's services in environmental education is the Soil Conservation Service. This agency has been extremely active in the promotion and development of school site laboratories and outdoor classrooms in both urban and rural settings. Many local SCS representatives serve as advisors to area school groups and faculties.

Although established to promote environmental education on a national level, the U.S. Office of Education has had minimal impact on Kentucky's environmental education programs. The three funded programs in Kentucky were Morehead State University (1971 and 1972) and Bellarmine College (1972). No funding was received in 1973 or 1974.

Kentucky's institutions of higher education are becoming increasingly more involved in environmental education. Several have sponsored teacher training and awareness workshops and career development in environmental fields is being successfully taught. Although not implemented on a large scale, pre-service teacher education is gaining in prominence and is expected to be a major contribution to environmental education.

CHAPTER III

Identification of Needs, Resources and Strategies:

The Barkley Conference

In December 1972, the Kentucky Department of Education sponsored a statewide conference, "Planning for Environmental Education." At this meeting many recommendations were formulated that were to be major environmental education activities in the following two years. The significance of this conference is well illustrated by the participation of over 130 individuals representing more than 65 interest groups throughout Kentucky. Major discussion sessions during the three day period identified needs, resources and strategies for developing Kentucky's Environmental Education Program into a unique and successful educational undertaking.

The total conference consisted of five sessions. The extensive results of these sessions were published as *Planning for Environmental Education: The Barkley Conference* by the Kentucky Department of Education. Although the listings from each session are not included in this document, it is interesting to note the specific objectives given to participants for individual sessions.

Session 1: WHAT ARE WE TALKING ABOUT?

At the end of this session the participants will have identified and listed the needs and problems relating to the environment and to environmental education in Kentucky.

Session 2: WHERE ARE WE NOW?

At the end of this session the participants will have identified and listed resources now in existence that have input into the solutions of problems and needs identified in Session 1.

Session 3: WHERE ARE WE GOING?

At the end of this session the participants will have determined problem priorities and needs identified in Session 1, and will have formulated and listed goals and objectives for environmental education for each priority area.

Session 4: HOW DO WE GET WHERE WE ARE GOING?

At the end of this session the participants will have identified and listed recommendations and plans for meeting the goals and objectives identified in Session 1, and will have formulated and listed goals and objectives for environmental education for each priority area.

Session 5: WHERE DO WE GO FROM HERE?

At the end of this session the participants will have summarized the results of the previous four sessions and will compare their responses with those of the other groups involved in the conference.

The listings and information produced by the Barkley Conference proved to be extremely valuable. The recommendations and suggestions made by the participants laid the foundation for actions and priority goals for the following two years. The final results of the conference are reflected in this plan under Section 4, Program Goals and Objectives. A complete description and tabulation of the Barkely Conference results is available through the Kentucky Department of Education, Bureau of Instruction.

CHAPTER IV

Program Goals and Objectives and Activites

The intention of the program goals, objectives, and activities is to identify, in quantitative terms, the steps necessary for fully implementing environmental education in Kentucky schools. It is important to note that the range of environmental education extends beyond formal education, however, and the Kentucky Department of Education or Advisory Council on Environmental Education may wish to initiate development of supplemental planning documents which include these adjacent areas.

There are five basic goals for implementing environmental education in Kentucky:

(1) **Teacher Orientation**
(2) **Program Development**
(3) **Physical Resource Utilization**
(4) **Promotion and Dissemination**
(5) **Program Implementation**

In the following section, each goal will be paired with appropriate objectives and activities.

GOAL: Teacher Orientation
Objective 1:

Teachers will have access to environmental education processes and techniques through pre-service education at teacher training institutions.

Activity 1.1:

The Kentucky Department of Education will assist teacher training institutions in the offering of environmental education training to teachers as a part of their pre-service training either through

special offerings in education or as integrated into existing educational courses.

Activity 1.2:

The Kentucky Department of Education will assist teacher training institutions in the use of environmental centers as training centers for student internships, student teaching, and as field course resources.

Objective 2:

Teachers will have access to environmental education processes and techniques through in-service workshops and seminars as sponsored by the LEAs.

Activity 2.1:

In-service programs, seminars and workshops on environmental education will be made available to LEAs through the Kentucky Department of Education.

Activity 2.2:

Assistance in developing specialized training programs will be made available through the periodical publication of a resource guide, written by the Kentucky Advisory Council on Environmental Education, listing available local, regional, state, and national organizations with personnel and services available to educators.

Activity 2.3:

The Kentucky Department of Education will assist institutions of higher education, governmental and civic groups in the development and promotion of environmental education seminars, workshops, and in-service programs for use by educators.

Activity 2.4:

The Kentucky Department of Education and Kentucky Educational Television will produce periodical presentations for LEAs and other educators to review techniques and processes to introduce innovative and successful programs in environmental education.

GOAL: Program Development

Objective 1:

Programs in environmental education will be coordinated through the Kentucky Department of Education.

Activity 1.1:

Annual summaries of existing programs in environmental education in Kentucky will be published.

Activity 1.2:

An annual conference on environmental education will be held with representatives from education, special interest groups, industry and government in attendance.

Activity 1.3:

Clearinghouses for environmental education materials, resources, and general information will be established.

Activity 1.4:

Staff will be provided by the Kentucky Department of Education for the coordination of statewide environmental education programs.

Activity 1.5:

Formation of a statewide organization for environmental education will be initiated by the Advisory Council for Environmental Education.

Activity 1.6:

Each LEA will designate an environmental education leader and contact individual for their system.

Activity 1.7:

The Kentucky Department of Education and Advisory Council for Environmental Education will review and update the state planning document for environmental education every four years or sooner upon recommendation of the Advisory Council.

Objective 2:

The Kentucky Department of Education will maintain an Advisory Council for Environmental Education for the purpose of making recommendations to the Kentucky Department of Education on matters relating to environmental education.

Activity 2.1:

The Kentucky Superintendent of Public Instruction will make the appointments to the Kentucky Advisory Council for Environmental Education.

Activity 2.2:

The membership of the Advisory Council for Environmental Education will consist of representatives from various levels of education, governmental groups, industry and citizens' groups that are involved with environmental educational activities with Kentucky schools.

GOAL: Physical Resource Utilization

Objective 1:

Utilization of school site resources will be initiated by teachers in Kentucky schools.

Activity 1.1:

Guidelines for utilization of school sites for environmental education will be published by the Kentucky Department of Education.

Activity 1.2:

Other materials relating to school site utilization will be made available through clearinghouse for environmental education.

Objective 2:

Utilization of community resources will be initiated by Kentucky's LEAs.

Activity 2.1:

School systems will inventory their local communities in order to identify human and physical resources and systems.

Activity 2.2:

The LEAs will develop and make available the resource inventories to local school personnel.

Activity 2.3:

Each LEA will establish an environmental education committee and include in its membership non-school personnel selected from the community resource inventory listing.

Activity 2.4:

Each LEA will develop and actively use at least one environmental study area beyond the school campus, using a community site as the study area.

Objective 3.

LEAs will expand their existing programs and include the staff and facilities of the environmental centers as resources.

Activity 3.1:

Environmental centers, both residential and non-residential, will encourage development of new programs by serving as demonstration areas.

Activity 3.2:

Environmental centers will participate in educational conferences, professional meetings, cooperative projects and other related activities directed towards introducing staff and facilities to LEAs.

Activity 3.3:

Information and materials relating to environmental centers, staff, facilities, and services offered, will be made available to LEAs and other groups.

GOAL: Promotion and Dissemination

Objective 1:

Promotion and dissemination of information relating to teacher orientation in environmental education will be initiated by the Kentucky Department of Education and the Kentucky Advisory Council for Environmental Education.

Activity 1.1:

The Kentucky Advisory Council for Environmental Education will assist the Kentucky Department of Education in preparing an instrument designed to assess the need for pre-service training in environmental education for Kentucky teachers.

Activity 1.2:

The Kentucky Department of Education will administer the survey and publish the results.

Activity 1.3:

Survey results will be tabulated to show the extent of present pre-service environmental education training available at each teacher training institution.

Activity 1.4:

Literature, general information and resource guides will be disseminated giving information on workshops, seminars, and in-service programs available to interested groups.

Activity 1.5:

The Kentucky Department of Education and Kentucky Educational Television will formulate and produce periodical presentations on environmental education in Kentucky for use by schools.

Activity 1.6:

A resource guide for environmental education will be published and disseminated by the Kentucky Department of Education on an annual basis.

Objective 2:

Promotion and dissemination of information relating to program development in environmental education will be initiated by the Kentucky Department of Education.

Activity 2.1:

The Kentucky Department of Education will disseminate annual summaries of existing programs in environmental education in Kentucky.

Activity 2.2:

Although all efforts will be welcomed, statewide promotion for environmental education will be the primary responsibility of the Kentucky Department of Education.

Activity 2.3:

A network of clearinghouse, grouping state sources and national clearinghouse sources, will be established for dissemination and promotional purposes.

Activity 2.4:

The Kentucky Department of Education will publish a listing of environmental educators in Kentucky with names submitted from schools, special interest groups, business, and governmental sources.

Objective 3:

Promotion and dissemination of information relating to physical resource utilization for environmental education will be initiated by the Kentucky Department of Education.

Activity 3.1:

Guidelines and promotional material will be developed and disseminated as resources for school site development by the Kentucky Department of Education.

Activity 3.2:

LEAs will disseminate community resource inventories to school personnel and interested groups and individuals.

Activity 3.3:

LEAs will disseminate information on and promote local programs and projects in environmental education.

Activity 3.4:

The Kentucky Department of Education will make available informational literature on environmental centers in Kentucky.

Activity 3.5:

Environmental centers will promote individual programs and facilities by making information available to the Kentucky Department of Education, conservation and environmental groups, and the media.

GOAL: Program Implementation

Objective 1:

The environmental education program will be implemented in Kentucky schools.

Activity 1.1:

The LEAs will integrate planned environmental curriculum activities into their local classrooms.

Activity 1.2:

The LEAs will assess knowledge gained and student attitudes toward environmental concepts taught.

CHAPTER V

Strategies for Implementation

As defined by Webster a strategy is "the science and art of employing the political, economic, psychological and military forces of a nation or group of nations to afford the maximum support to adopted policies . . ." The strategy for environmental education must employ all of the above as tools for developing a statewide program. Although these forces are necessary to support the implementation, it is obvious that not all groups will be effective in use of all of these forces. Different groups will have different responsibilities. To identify these responsibilities or roles is to identify the strategies for implementation.

There are specific roles for each of the five main goals identified in the previous sections. There are several broad categories of groups that will have input into the implementation of these goals. This section will identify the role of these groups with respect to specific goals of teacher orientation, program development, physical resource utilization, and promotion and dissemination. The categories, representative of most groups, are Kentucky Department of Education, institutions of higher education, schools (K-12), special interest groups, and governmental groups. Each category will be discussed with respect to the inputs, the role, each will assume in the implementation of goals.

GOAL: Teacher Orientation

Kentucky Department of Education. This department will have the overall coordinating responsibility for both in-service and pre-service. Services to be provided include consultancy to colleges and universities, assistance in the organization of formal programs of study for environmental education, consultancy to public and private schools for in-service, and consultancy to non-education groups in providing services for teacher orientation.

Institutions of Higher Education. Kentucky's colleges and universities will have major responsibilities for pre-service education through education departments. Other responsibilities include the offering of environmental educational programs as integrated into specialized study areas and the development of

in-service programs.

Schools (K-12). The school systems have the major responsibility for in-service training of staff including classroom teachers and student aides.

Special Interest Groups. These groups will be responsible for providing technical and logistical assistance in support of in-service and pre-service programs. Other activities may include the providing of specialized curriculum supplements to educational groups and in providing funding for special programs involved with teacher training.

Governmental Groups. Local, state and federal agencies have responsibilities in the sponsoring of workshops, seminars and conferences on teacher orientation, and in the providing of financial assistance for teacher orientation activities.

GOAL: Program Development

Kentucky Department of Education. This department will have the responsibility for the overall coordination of program development in environmental education. Activities will include the provision of adequate staff for statewide coordination, the piloting of new, exemplary curriculum, the development of model curriculum projects, the provision for consultants on curriculum development projects, the limited financing of projects in program development, and the providing of assistance in securing of funding from other sources for program development activities.

Institutions of Higher Education. The colleges and universities shall have the major responsibility for pure and applied research in the field of environmental education. Other areas of responsibility include the development of model curriculum, the establishment of exemplary sites and demonstrations, the providing of consultant services, and the provision of substantial undergraduate and graduate experiences in program development in environmental education.

Schools (K-12). Within the organization of schools lies the responsibility for program implementation. The development of community resources into program aids is a significant part of this responsibility. Other activities include the appointment of a contact individual with major responsibilitiy for environmental education and support of program efforts with local funds as well as the recruitment of funding from other sources.

Special Interest Groups. Expertise within special interest groups is a valuable resource for program development. The major input of these groups is in provision of supplemental services and materials and occasional funding of special programs.

Governmental Groups. Within the realm of program development, several governmental groups have developed self-contained instructional programs for use by educators. Technical assistance is another valuable asset provided by these groups. Other activities include the promotion of specific themes, wildlife, soils, litter, population, etc., and the funding of special programs that are related to the purpose of the governmental group.

GOAL: Physical Resource Utilization

Kentucky Department of Education. As physical resources, such as school sites, residential and non-residential resource centers, develop in Kentucky, the Kentucky Department of Education shall have the major responsibility for developing materials that aid educators in the interpretation and integration of these resources into their existing courses of studies. Such materials shall facilitate involvement of

non-education groups and encourage these groups, governmental agencies, special interest groups, and industry, to construct, make available, or provide personnel to assist in the development of regional resource areas throughout Kentucky.

Institutions of Higher Education. Kentucky's colleges and universities have major responsibilities in establishing regional models using available physical resource areas and in providing consultancy to other educational programs in the development and integration of such areas.

Schools (K-12). LEAs and the schools within the systems have special responsibilities in identifying local physical resources such as industries, treatment plants, museums, nature centers, parks, school sites, as educational supplements to their curriculum. Equal effort should be directed toward the regional resources. Ultimately, it is the responsibility of the school to coordinate the use of local and regional resources with the total school curriculum.

Governmental Groups. Since many of these agencies have access to special lands, facilities, and personnel, their input lies primarily in the realm of providing open access and technical assistance to education groups desiring to use these areas. Special emphasis should be given to the promotion of these areas by the governmental agency.

GOAL: Promotion and Dissemination

Kentucky Department of Education. The maintaining of an Advisory Council for Environmental Education and the collection and dissemination of environmental education information is the primary role of the Kentucky Department of Education. Activities should include the publishing of a statewide newsletter, the organization of an annual statewide conference on environmental education, the release of periodical press announcements and articles, the establishing of a dissemination and information network throughout the state, the promotion of regional clearinghouses and the organization of a statewide association for environmental education.

Institutions of Higher Learning: The colleges and universities should function as centers for regional clearinghouses for environmental education. They should be involved in the development and dissemination of promotional literature and each should have an officially designated contact-liaison responsible for environmental education and representative in the statewide dissemination network.

Schools (K-12). LEAs should promote and disseminate program information on local programs and maintain a contact-liaison individual as representative in the statewide dissemination network. Special efforts should be made to disseminate information received to the classroom teacher.

Special Interest Groups. As groups representing special areas of interest, promotional materials should be made available with respect of these interests. Since such material is on a single theme or topic, it should be represented as such and references to additional material should be included whenever possible.

Governmental Groups. In addition to the promotion of specialized study programs, such as NEED by the National Park Service, governmental groups should disseminate information relating to the availability of facilities, programs, and personnel that would be of use to schools. The U.S. Government Printing Office publishes much material relating to the environment and suitable for use in environmental education programs. These publications, as well as specially developed technical material, should be made readily available to school groups. Each participating governmental group should become a part of the statewide dissemination network.

GOAL: **Program Implementation**

Kentucky Department of Education. This department shall maintain a record of reports submitted by the LEAs relating to program implementation for environmental education.

Institutions of Higher Education: These institutions shall assist the LEAs in the development of assessment techniques, tests, and surveys for the purpose of reporting on program implementation within the schools.

Schools (K-12). The schools have the major responsibility for implementation of environmental education into the curricula. The schools will administer evaluative instruments and develop reporting procedures relating to program implementation in environmental education.

Special Interest Groups. These groups will assist in the promoting of program implementation through non-educational contacts.

Governmental Groups. These groups will assist in promotion of program implementation through contacts available.

CHAPTER VI

Evaluation and Accountability

As a means for evaluating the progress made in implementing the state planning document and as a means for establishing the credibility for implementation, a time frame has been established for the goals and objectives identified in Chapter IV, Program Goals and Objectives. This time frame lists a deadline date for each activity and identifies those activities that are continuous by giving the date of implementation followed by the designation of "continuous."

Time Frame for Activities

GOAL: Teacher Orientation

Activity No:	Date of Implementation
1.1	To be completed by 1980
1.2	To be completed by 1978
2.1	Continuous beginning 1975
2.2	Continuous beginning 1975
2.3	Continuous beginning 1975
2.4	To be completed by 1977

GOAL: Program Development

Activity No:	Date of Implementation
1.1	Continuous beginning 1976
1.2	Continuous beginning 1976
1.3	To be completed by 1980
1.4	Continuous beginning 1975
1.5	Continuous beginning 1976
1.6	Continuous beginning 1975
1.7	Continuous beginning 1979
2.1	Continuous beginning 1975
2.2	Continuous beginning 1975

GOAL: Physical Resource Utilization

Activity No:	Date of Implementation
1.1	Continuous beginning 1976
1.2	To be completed by 1980
2.1	Continuous beginning 1975
2.2	Continuous beginning 1975
2.3	Continuous beginning 1975
2.4	Continuous beginning 1976
3.1	Continuous beginning 1975
3.2	Continuous beginning 1975
3.3	Continuous beginning 1975

GOAL: Promotion and Dissemination

Activity No.	Date of Implementation
1.1	Continuous beginning 1976
1.2	Continuous beginning 1976

GOAL: Promotion and Dissemination (cont.)

Activity No:	Date of Implementation
1.3	Continuous beginning 1975
1.4	Continuous beginning 1977
1.5	Continuous beginning 1975
1.6	To be completed by 1976
2.1	Continuous beginning 1976
2.2	Continuous beginning 1975
2.3	Continuous beginning 1980
2.4	Continuous beginning 1975
3.1	Continuous beginning 1975
3.2	Continuous beginning 1976
3.3	Continuous beginning 1975
3.4	Continuous beginning 1975
3.5	Continuous beginning 1975
4.1	Continuous beginning 1975
4.2	Continuous beginning 1976
4.3	Continuous beginning 1976

GOAL: Program Implementation

Activity No:	Date of Implementation
1.1	Continuous beginning 1976
1.2	Continuous beginning 1976

Annual reports will be made with respect to progress towards implementation of activities with full review of the state planning document being made every four years or as called for by the Kentucky Advisory Council for Environmental Education.

Prepared by:

Kentucky Department of Education
Advisory Council for Environmental Education

For further information contact:

Terry L. Wilson
Consultant, Environmental Education
Bureau of Instruction
1817 Capital Plaza Tower
Frankfort, KY 40601
Telephone: (502) 564-3749

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